

Certification of Neutron Moderation for Pure Oxides

Completed measurement of over 60 packaged oxides at Los Alamos. These were almost exclusively pure ($> 80\%$ Pu) oxides.

Instrument installed at Hanford PFP for field verification measurements

Hardware and funding issues have been holding up beginning the measurement campaign at Hanford. Both of these issues have now been resolved.

Sixty items have been identified for initial measurement campaign. Approximately 15 of these items are relatively pure oxides.

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Potential Certification Issues:

Dependence of measurement results on fill height – fill height will be determined by segmented gamma ray scanning to aid in data analysis.

Small quantity of material in some Hanford packages

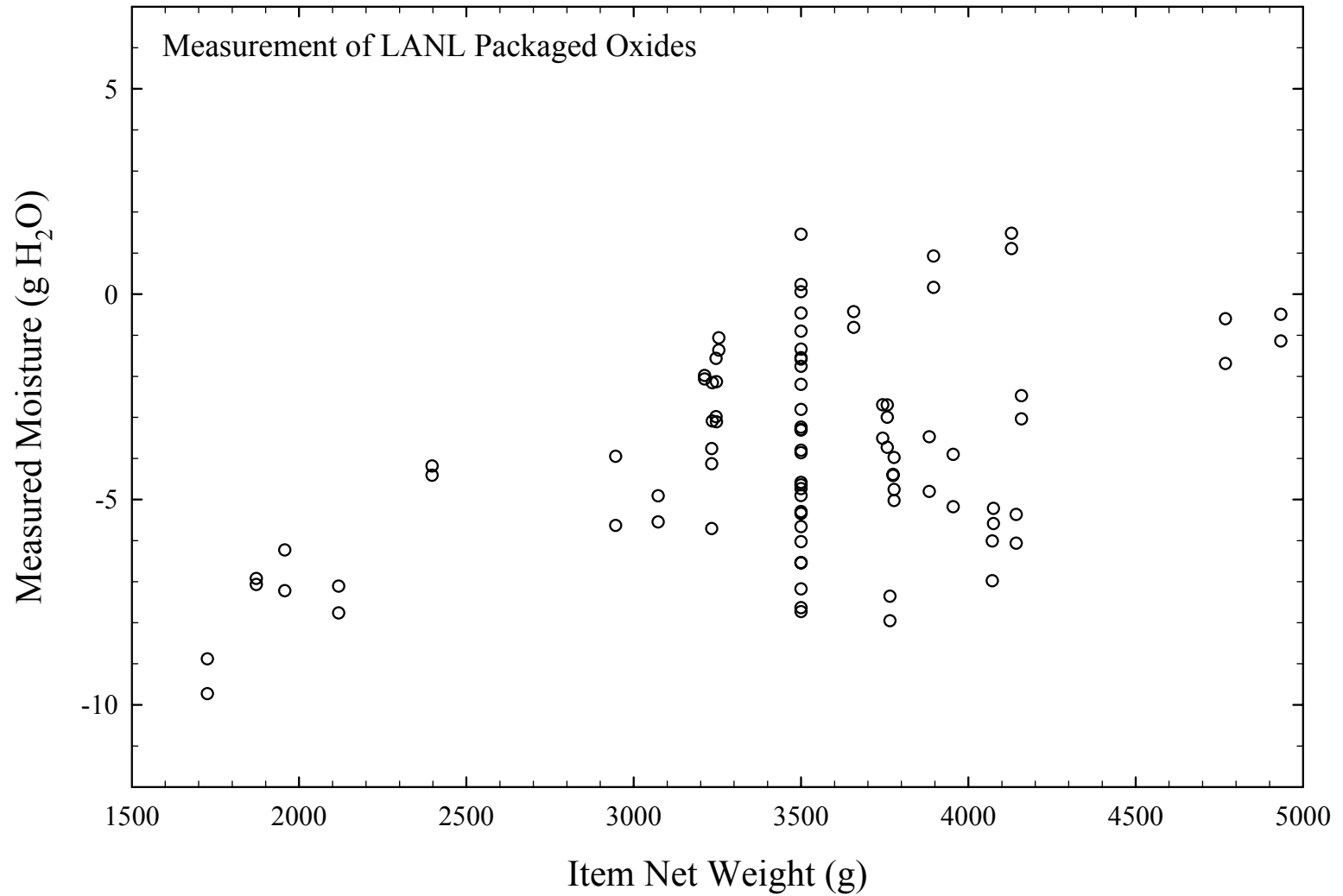
Potentially limited knowledge of exact moisture content in Hanford packages

Limited data for packages containing higher quantities (> 0.5 percent) moisture

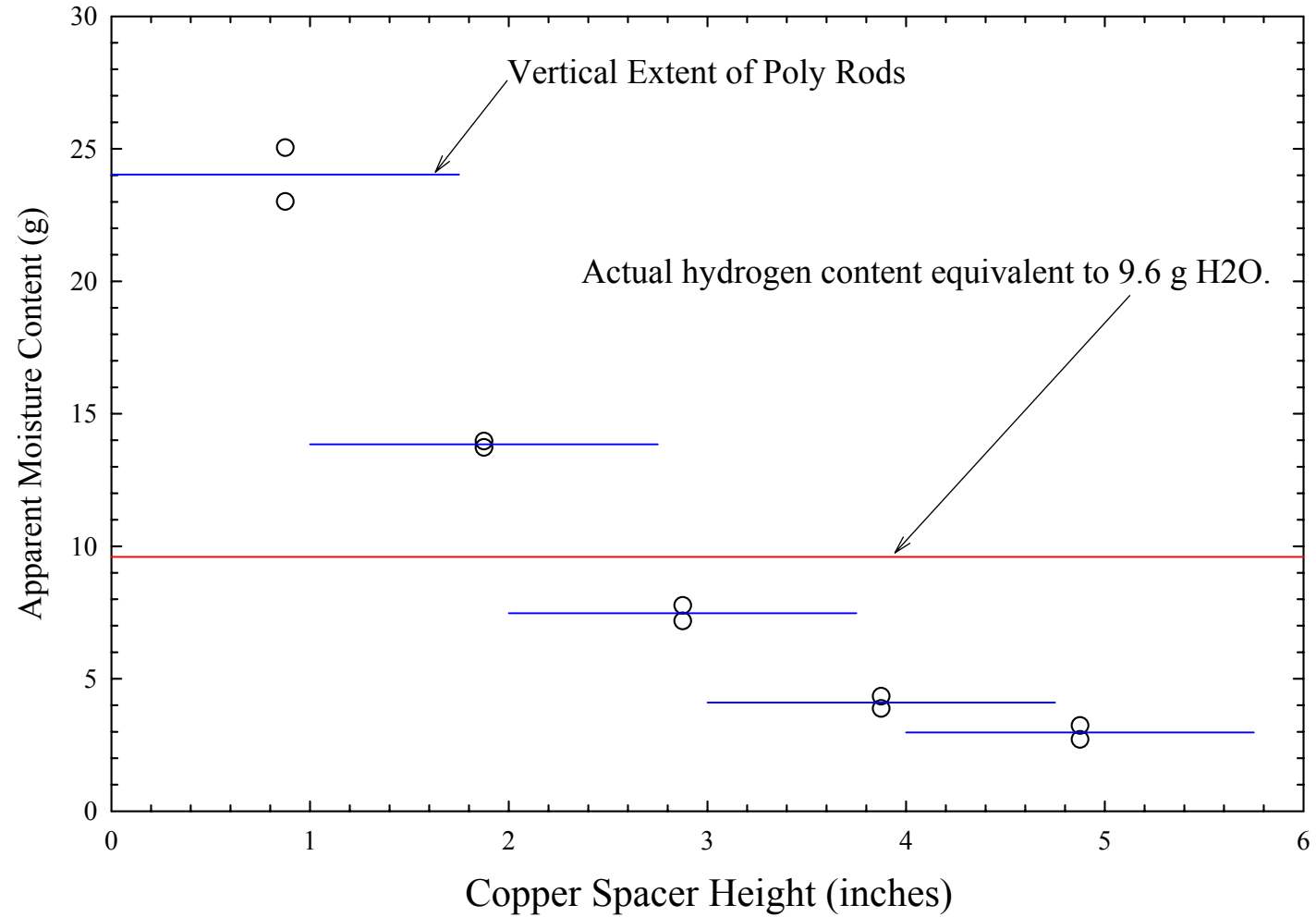
After measurement of first set of pure oxides at Hanford, we will stop and evaluate the data and make further recommendations at that point.

Assuming we get results with which we are comfortable, we will produce a technical basis document for measurement of moisture in pure oxides as a result of these tests.

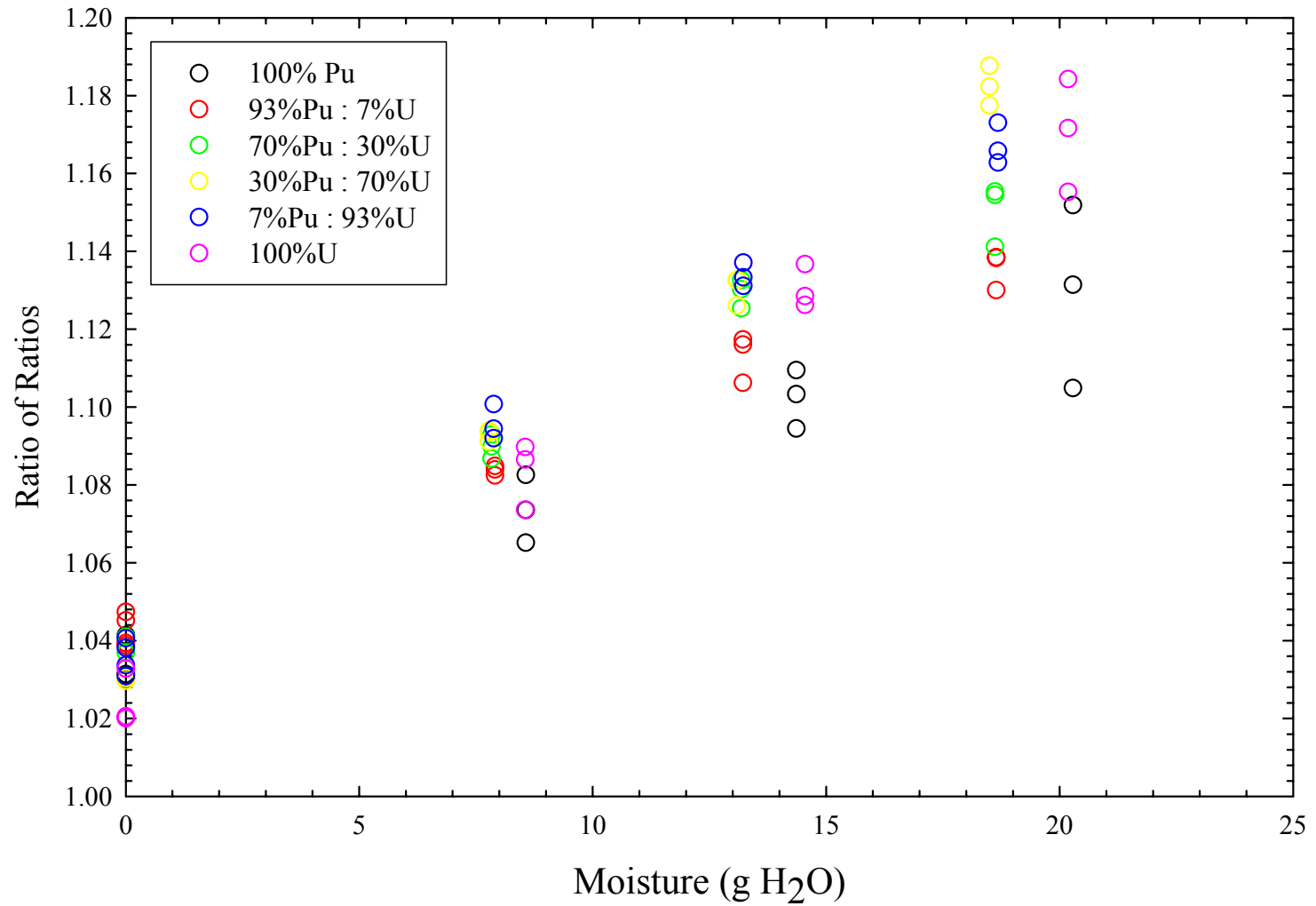
Measured Moisture with Fast Flux Normalization



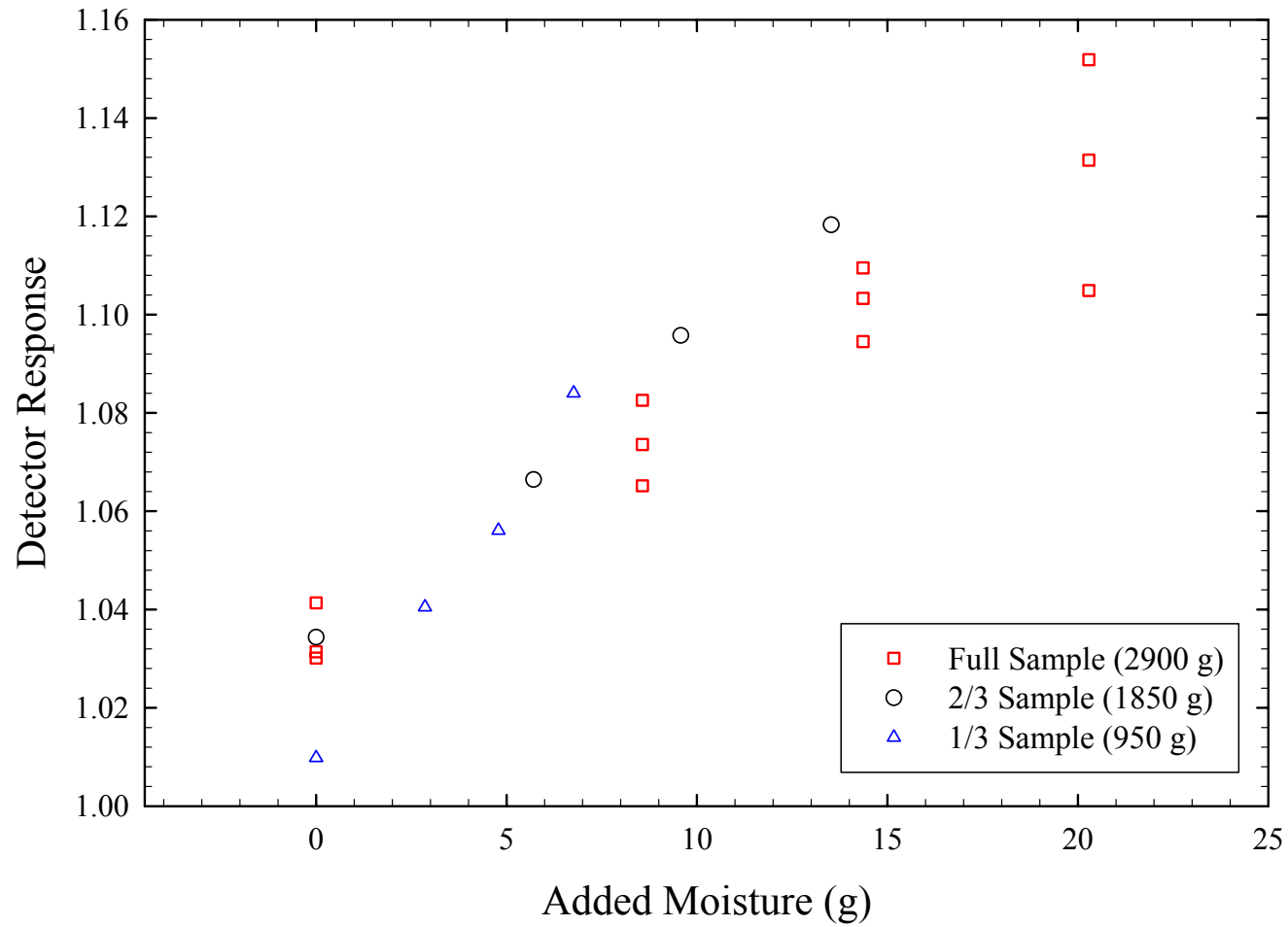
Vertical Response to Moisture Content



Results on Full Can Mixtures of Pu/U Oxide



Measurements on Pure Pu Oxide



Measurements on Pure Pu Oxide

